Docket No.: 2360-0406P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Ueli BREITSCHMID

Application No.: 10/810,901 Confirmation No.: 1090

Filed: March 29, 2004 Art Unit: 3723

For: INTERDENTAL BRUSH Examiner: R. E. Chin

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

As required under § 41.41(a), this brief is filed within two months from the Examiner's Answer dated February 3, 2009.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1208:

I. Status of Claims
II. Grounds of Rejection to be Reviewed on Appeal
III. Argument

I. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 19 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 3, 5, 7, 8, 10-13, 15, 17
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1, 2, 4, 6, 9, 14, 16, 18-29
4. Claims allowed: None
5. Claims rejected: 1, 2, 4, 6, 9, 14, 16, 18-29

C. Claims On Appeal

The claims on appeal are claims 1, 2, 4, 6, 9, 14, 16, 18-29

II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. The Final Office Action rejects claims 1, 2, 4, 6, 9, 14, and 16 under 35 U.S.C. § 102(b) as being anticipated by EP 0800781 (referred to as EPO '781).

2. The Final Office Action rejects claims 1, 2, 4, 6, 9, 14, and 16 under 35 U.S.C. § 103(a) as being unpatentable over EPO '781.

3. The Final Office Action rejects claims 18-29 under 35 U.S.C. § 103(a) as being unpatentable over EPO '781 in view of JP 8-308637 (JP '637).

III. ARGUMENT

§ 102(b) Rejection – EPO '781

CLAIM 1

The Examiner's Answer presents further arguments in a section "Response to Argument," beginning at page 11 for the rejection under 35 U.S.C. 102(b). In particular, the Examiner's Answer alleges that: "Notwithstanding the fact that in EPO '781 the seventh aspect of the invention may define an exemplary "new alloy" with a nickel content of 0.52% by weight (Table 2), such fact does not take away from the fact that EPO '781 also discloses at least nine (9) other aspects of the invention (p. 2, line 54 to p. 3, line 51), more specifically what has been disclosed by the first, second and third aspects of the invention." (Examiner's Answer at page 12)

Appellants note that the disclosed first through fourteenth "aspects" in EPO '781 are restatements of corresponding claims 1-14. The claims are constructed using the terms "comprises" and "at least," and as such are open-ended. Subsequently, not listing a component implies no specific amount of the material not listed. For example, not listing any specific quantity of nickel in a claim implies that the claim is not limited to a specific quantity of the material.

The "first," "second," and "third" aspects referred to in the Examiner's Answer are language of the corresponding claims 1-3. Of these three aspects, only the "third" aspect is limited to "an austenitic stainless steel."

Appellant submits that the open ended construction of claims 1-3 (First, second, third aspects) in EPO '781 does not anticipate the claimed range that an "austenitic steel includes less than 0.05% nickel by weight." M.P.E.P. § 2131.03 specifically provides rules that pertain to this issue.

In the case that a specific example is disclosed in the prior art, section 2131.03(I) provides that,

> "[W]hen, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if *one* of them is in the prior art." *Titanium Metals Corp. v. Banner,* 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (citing *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962)) (emphasis in original) (Claims to titanium (Ti) alloy with 0.6-0.9% nickel (Ni) and 0.2-0.4% molybdenum (Mo) were held anticipated by a graph in a Russian article on Ti-Mo-Ni alloys because the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni and this composition was within the claimed range of compositions.).

As had been argued in the Appeal Brief, Appellant submits that EPO '781 does not disclose a specific example within the claimed range. In particular, the closest specific example is an example that corresponds to an "alloy of the first group" which contains 0.52 % nickel (Table 2), and is outside the claimed range. All other disclosed examples contain much greater percent nickel (Table 2).

The Examiner's Answer further alleges that because the first, second and third aspects recite a brush wire that contains "at least iron, chromium, manganese and nitrogen" the nickel amount would be 0 wt% since nickel has not been included as a material. Appellant submits that to the opposite of the Examiner's position, the first, second, and third aspects imply no specific amount of nickel, by the corresponding language "comprises" and "at least."

In the case that the prior art teaches an overlapping range, section 2131.03 (II) provides that,

> When the prior art discloses a range which touches or overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, and the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. See, e.g., *Atofina v. Great Lakes Chem. Corp*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a

> reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory. Further, while there was a slight overlap between the reference's preferred range (150-350 degrees C) and the claimed range, that overlap was not sufficient for anticipation. "[T]he disclosure of a range is no more a disclosure of the end points of the range than it is each of the intermediate points." *Id.* at 1000, 78 USPQ2d at 1424.

Appellant submits that nowhere in EPO '781 do the "aspects" and corresponding claims recite 0% by weight nickel or that nickel is not included.

The Examiner's Answer at page 13 asserts that, "the fact that nickel has never been explicitly mentioned in the recited composition of steel wire for the first, second and third aspects of the invention is an indication that even if nickel were present in such composition, such nickel amounts would be so minimal or infinitesimal and so close to zero as to render nickel not worthy of mention or of nil effect in these first, second and third aspects of the invention."

Appellant submits that to the contrary, the first, second, and third aspects as corresponding to claims 1-3, intend broad legal coverage of alloy content, not a specific example. In fact the closest specific example that is disclosed in EPO '781 shows 0.52 percent nickel content, which is far outside the claimed range.

The Examiner's Answer, bottom paragraph of page 13, refers specific examples in Table 3 of EPO '781 for teaching the tensile strength recited in claims 1, 4, and 9. However, none of the examples in Table 3 meet the claimed composition of nickel.

Claim 1 recites "wherein the austenitic steel includes less than 0.05% nickel by weight, wherein the two wire sections have a tensile strength of 1000 N/mm^2 or more."

CLAIMS 4, 9

The Examiner's Answer erroneously states the feature recited in claims 4 and 9 as being "1000 N/mm^2 or more" or "1200 N/mm^2 or less." Claims 1, 4 and 9 require both conditions, i.e. "and." Subsequently, the Examiner's Answer is in error at least with respect to claims 4 and 9.

For at least these reasons, Appellant submits that EPO '781 does not disclose interdental brush wire meeting the combination of claimed ranges.

CLAIMS 6, 14, 16

The Examiner's Answer alleges that EPO '781 teaches in Fig. 3 stretching and drawn out steps for the wire sections during manufacturing. (Examiner's Answer at page 14, first paragraph, as well as bottom paragraph of page 16). Appellant disagrees.

Fig. 3 of EPO '781 is disclosed as showing the procedure of twisting (EPO '781 at page 4, lines 42-44).

In the present invention, stretching and drawing out provide the internal crystalline structure, as opposed to a non-stretched wire, which contributes to desirable properties of the wire of the present invention, e.g. high tensile strength and stiffness, with ease of processing by high speed machines (specification at page 3, lines 1-12, 24-28).

For at least these reasons, Appellant submits that at least claims 6, 14, and 16 are patentable over EPO '781.

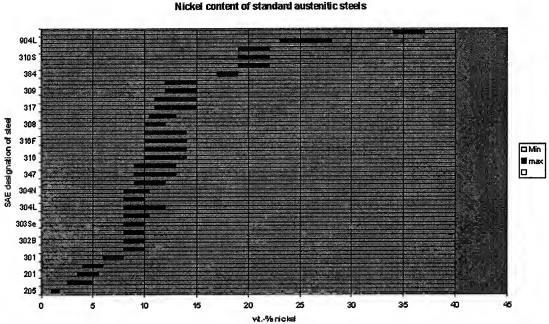
§ 103(a) Rejection – EPO '781

CLAIM 1

With respect to the section 103(a) rejection, the Examiner's Answer indicates that even if EPO '781 fails to disclose the claimed "nickel content is less than 0.05% nickel by weight" with sufficient specificity, EPO '781 specifically teaches "first," "second," and "third" aspects of the invention where nickel has not been included in the brush wire composition," and concludes that therefore, nickel is never required in composition for the brush wire and is deemed to have a nickel content of 0 (zero). (Examiner's Answer at page 14).

As in the above arguments for the section 102 rejection, Appellant submits that the Examiner's interpretation of the "aspects," which correspond to claim language, is in error. Appellant submits that by the language "comprises" and "at least," EPO '781 implies no specific amount of material such as nickel, not zero.

In addition, Appellant submits that it is well known in the art that standard austenitic steels include amounts of nickel that are much greater than the claimed upper limit of 0.05% nickel. Thus, contrary to the Examiner's allegation that aspects/claims in EPO '781 imply zero nickel content, Appellant submits that the open-ended language in claims of EPO '781 includes standard austenitic steels. A chart of standard austenitic steels by SAE designation is provided below.



As can be seen in the chart, standard austenitic steels contain substantial nickel content, none of which include a nickel content that falls within the claimed range. Subsequently, Appellant submits that not only does EPO '781 fail to show a specific example of an austenitic steel that falls within the claimed range, one of ordinary skill in the art would understand that EPO '781 does not disclose specific austenitic steels having a range of nickel content (i.e., other than known standard austenitic steels) that overlaps with the claimed range.

Furthermore, the Examiner's answer treats the claimed range of tensile strength as an independent feature. In particular, the Examiner's Answer alleges that even if EPO '781 fails to discloses the claimed range of tensile strength, it would have been obvious to one of ordinary skill in the art to have optimized the tensile strength range "since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art."

Appellant submits that EPO '781 does not disclose a specific austenitic steel falling within the combination of ranges for percent nickel and tensile strength. The closest example in Table 3 for an "alloy of the first group" contains nickel at 0.52 percent (Table 2).

Appellant submits that it is known in the art that tensile strength is a material property of a steel alloy, which among other things is closely related to the complete alloy composition. Subsequently, Appellant submits that it would not be obvious to one of ordinary skill in the art that a desired tensile strength can be achieved by reducing the content of a single element, i.e., nickel, in the composition.

Furthermore, EPO '781 discloses that an interdental brush wire of the "alloy of the first group" is the most suitable as an interdental brush wire (i.e., is optimum). (EPO '781 at page 10). In particular, EPO '781 discloses the "alloy of the first group" as being the alloy of the present invention that provides the alloy necessary for an interdental brush wire and an interdental brush which are not buckled or broken, have excellent durability and manipulation ease owing to a resilient brush and are excellent in the ability of insertion between teeth. (EPO '781 at page 2, lines 41-44). In addition, there is neither an indication in EPO '781 that "not buckle," "not broken," "excellent durability" and "manipulation ease" would be achieved by optimizing the tensile strength, nor is there an indication that reducing the nickel content would be necessary. Subsequently, Appellant submits that there is no evidence in EPO '781 that it would have been obvious to optimize the tensile strength to that of the range claimed.

For at least these reasons, the Examiner's Answer fails to establish *prima facie* obviousness.

§ 103(a) Rejection – EPO '781 and JP '637

CLAIM 18

With respect to the rejection of claims 18 and 29, the Examiner's Answer alleges that various combinations of alloys will still meet the claimed features irrespective of the percent composition. For example, the Examiner's Answer states that JP '637 has been merely applied to teach that titanium could be included as an element within austenitic steel, and that "the fact that there might be a high/higher nickel content in the secondary reference to JP '637 is not

patentably relevant as the claimed nickel range has already been met." (Examiner's Answer at page 17).

Firstly, as noted above, Appellant submits that EPO '781 does not disclose an austenitic steel as claimed. Further as noted above, Appellant submits that it is improper to refer to open ended claim language in a reference instead of specific disclosed examples, and allege that the broad coverage of the claim teaches a specific range. Secondly, Appellant submits that an alternative combination of alloy materials strongly influences the properties of steel, such as tensile strength. The amount of the particular alloy constituents cannot be varied independently in order to arbitrarily adjust properties of the steel. Moreover, constituents favoring the austenitic phase of steel cannot be simply exchanged since they also influence other material properties, e.g., tensile strength, and can therefore not simply replace each other without further adjustments of the alloy composition. In addition, Appellant submits that JP '637's teaching of high/higher nickel content along with titanium is evidence that high nickel content is preferable, not irrelevant as alleged in the Examiner's Answer.

In addition, Appellant submits that one of ordinary skill in the art would understand that austenitic stainless steels incorporate nickel in order to preserve the austenitic structure, and that the highest quality austenitic stainless steels have higher nickel content. Thus, "optimization" in austenitic stainless steels generally means increasing the content of nickel. Appellant submits that providing an extremely low content of nickel in an austenitic stainless steel of the present invention is contrary to conventional "optimization" with respect to quality in austenitic stainless steels.

For at least these reasons, Appellant submits that EPO '781 and JP '637, either alone or in combination, fail to teach each and every claimed element in respective claims as a whole.

Accordingly, Appellant submits that the rejections are improper and must be withdrawn.

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Respectfully submitted,

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